

INCH-POUND

MIL-DTL-16878/31B
11 August 2000
SUPERSEDING
MIL-W-16878/31A(NAVY)
11 September 1992

DETAIL SPECIFICATION SHEET

WIRE, ELECTRICAL,
SILICONE RUBBER INSULATED, 150 °C, 1000 VOLTS,
GLASS BRAID COVERING, ABRASION RESISTANT

This specification is approved for use by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-16878G.

REQUIREMENTS.

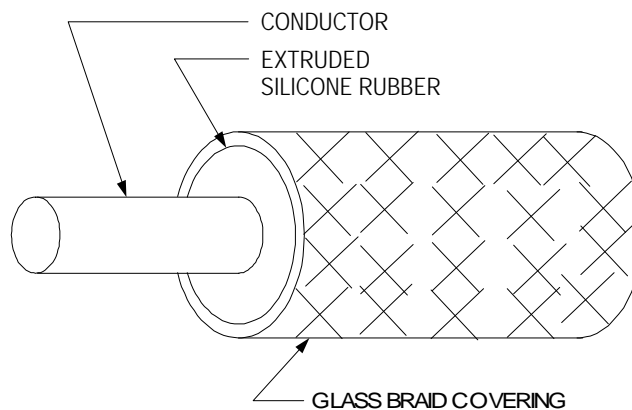
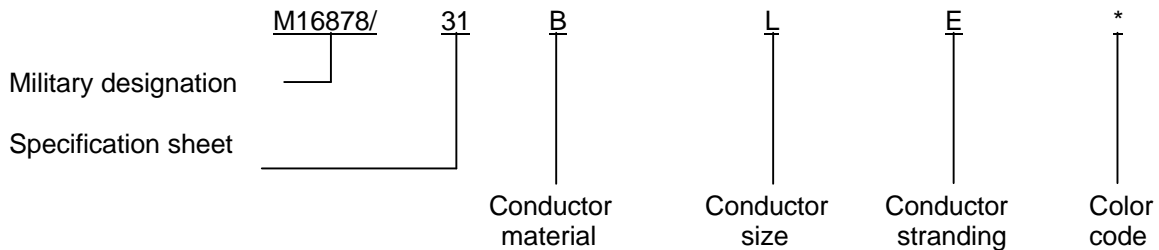


FIGURE 1. Wire configuration.

TABLE I. Wire configuration and dimensions.

PIN ^{1/}	Wire size	Stranding	Conductor		Conductor diameter (nominal) (inch)	Finished wire diameter (inch)	
			Material	Coating		Min	Max
M16878/31BEB*	24	7 X 32	Copper	Tin	.024	.083	.106
M16878/31BFB*	22	7 X 30	Copper	Tin	.030	.089	.112
M16878/31BGB*	20	7 X 28	Copper	Tin	.038	.097	.120
M16878/31BGC*	20	10 X 30	Copper	Tin	.038	.097	.120
M16878/31BHB*	18	7 X 26	Copper	Tin	.048	.107	.130
M16878/31BHD*	18	16 X 30	Copper	Tin	.048	.107	.115
M16878/31BJE*	16	19 X 29	Copper	Tin	.057	.116	.139
M16878/31BJF*	16	26 X 30	Copper	Tin	.057	.116	.139
M16878/31BKE*	14	19 X 27	Copper	Tin	.072	.161	.191
M16878/31BKH*	14	41 X 30	Copper	Tin	.072	.161	.191
M16878/31BLE*	12	19 X 25	Copper	Tin	.091	.180	.210
M16878/31BLJ*	12	65 X 30	Copper	Tin	.091	.180	.190
M16878/31BMG*	10	37 X 26	Copper	Tin	.111	.200	.230
M16878/31BMK*	10	105 X 30	Copper	Tin	.111	.200	.210
M16878/31BNL*	8	133 X 29	Copper	Tin	.169	.282	.342
M16878/31BPL*	6	133 X 27	Copper	Tin	.213	.326	.386
M16878/31BRL*	4	133 X 25	Copper	Tin	.269	.382	.442
M16878/31BSL*	2	133 X 23	Copper	Tin	.335	.448	.508
M16878/31BTN*	1	259 X 25	Copper	Tin	.378	.519	.585
M16878/31BUN*	0	259 X 24	Copper	Tin	.424	.565	.631
M16878/31BWN*	00	259 X 23	Copper	Tin	.477	.618	.684
M16878/31BYN*	000	259 X 22	Copper	Tin	.533	.694	.725
M16878/31BZN*	0000	259 X 21	Copper	Tin	.601	.742	.808

Notes:

^{1/} PIN stands for part or identifying number (see figure 2).FIGURE 2. Example of PIN (see MIL-DTL-16878G).

Configuration and dimensions:

Operating voltage:

Operating temperature:

Insulation:

Braid covering:

See figure 1 and table I

Up to 1000 volts

Up to 150 °C

Extruded silicone rubber

Abrasion resistant glass braid. Braid covering shall be tightly formed, uniform in appearance, and treated with a clear finisher coating to prevent fraying. The finisher coating shall be compatible with the temperature rating and performance requirements of the insulated wire.

Spark test voltage: 5.0 kV
 Impulse dielectric test voltage: 10 kV, or 7.1 kV using the 3.0 kHz spark test
 Dielectric withstanding voltage: 3.0 kV
 Insulation resistance: $IR = K \log_{10} D/d$
 Where: IR = Minimum insulation resistance in megohms
 per 1000 feet at 20 °C
 K = 1,000
 D = Maximum average diameter of finished wire
 d = Conductor diameter
 Cold bend: Condition 4 hours at -55 ± 1 °C (see table II). The
 braid shall not open up as a result.

TABLE II. Cold bend mandrel sizes.

Wire size	Cold bend mandrel diameter (inches, maximum)
24, 22	1
20 through 12	2
10 through 6	3
4, 2	4.5
1, 0	6
00, 000, 0000	10

Surface resistance: 5 megohm-inches (minimum)
 Heat resistance: Condition at 250 °C
 Heat aging: Not required
 Insulation tensile strength: 700 pounds force per square inch (minimum, braid shall be
 removed prior to testing.
 Insulation elongation: 125 percent (minimum, braid shall be removed prior to
 testing.
 Fungus resistance: Not required
 Marking and stripe durability: Not required

CHANGES FROM PREVIOUS ISSUE. Marginal notations are not used in this revision to identify changes with respect to the previous issue because of the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:
 Navy - SH
 Air Force - 11
 DLA - CC

Preparing activity:
 DLA - CC
 (Project 6145-2193-015)

Review activity:
 Navy - AS